# CLAIMS

WHAT IS CLAIMED IS:

Claim 1: A process for preparing a controlled mixture of 1,2- and 1,3-diglyceride esters of fatty acids comprising the steps of:

(a) circulating a reaction mixture at least once through an enzymatic reaction zone A that is maintained at a temperature conducive to enzymatic catalysis; and

(b) circulating the reaction mixture at least once through a thermal reaction zone B maintained at a temperature to facilitate the rearrangement of 1,3-diglycerides to 1,2 diglycerides;

wherein, the reaction mixture comprises glycerol, glycerides, or mixtures thereof in combination with fatty acids, fatty acid derivatives, or mixtures thereof.

Claim 2: The process according to claim 1, wherein the thermal reaction zone B is maintained at a temperature of about 5°C or more greater than that of the temperature of enzymatic reaction zone A.

Claim 3: The process according to claim 1, wherein the thermal reaction zone B is maintained at a temperature of about 20°C or more greater than that of the temperature of enzymatic reaction zone A.

Claim 4: The process according to claim 1, wherein a 1-3 selective lipase enzyme is used for the enzymatic catalysis of the enzymatic reaction zone A.

Claim 5: A process for preparing triglyceride esters of fatty acids comprising the steps of:

(a) circulating a reaction mixture at least once through an enzymatic reaction zone A that is maintained at a temperature conducive to enzymatic catalysis;

(b) circulating the reaction mixture at least once through a thermal reaction zone B maintained at a temperature to facilitate the rearrangement of 1,3-diglycerides to 1,2 diglycerides; and

(c) re-circulating the reaction mixture at least one time through the enzymatic reaction zone A to produce triglycerides;

wherein, the reaction mixture comprises glycerol, glycerides, or mixtures thereof in combination with fatty acids, fatty acid derivatives, or mixtures thereof.

Claim 6: The process according to claim 5, wherein the process further comprises the step of removing non-glyceride reaction by-products from zones A or B.

Claim 7: The process according to claim 5, wherein the thermal reaction zone B is maintained at a temperature of about 5°C or more greater than that of the temperature of enzymatic reaction zone A.

Claim 8: The process according to claim 5, wherein the thermal reaction zone B is maintained at a temperature of about 20°C or more greater than that of the temperature of enzymatic reaction zone A.

Claim 9: The process according to claim 5, wherein a lipase is utilized for the enzymatic catalysis of the enzymatic reaction zone A.

Claim 10: The process according to claim 9, wherein the lipase is supported on a non-reactive matrix.

Claim 11: The process according to claim 9, wherein the lipase is selected from the group consisting of: *Rhizomucor miehi*, *Candida antarctica*, *Candida cylindracea*, *Pseudomonas cepacia*, *Pseudomonas fluorescens*, *Candida rugosa*, *Aspergillus niger*, and *Geotrichum candidum*.

Claim 12: The process according to claim 9, wherein the lipase is a 1,3-specific lipase.

Claim 13: The process according to claim 5, wherein the mole ratio of the fatty acids or fatty acid derivatives to the glycerol is about 0.5:1 to 3.5:1.

Claim 14: The process according to claim 5, wherein the fatty acids or derivatives thereof are conjugated fatty acids or derivatives thereof.

Claim 15: A process according to claim 14, wherein the conjugated fatty acids or derivatives thereof are conjugated linoleic acids or derivatives thereof.

Claim 16: The process according to claim 15, wherein the conjugated linoleic acids or derivatives thereof are enriched with *cis*-9, *trans*-11 or *trans*-10, *cis*-12-conjugated linoleic acid isomers.

Claim 17: A composition of glyceride esters of fatty acids made by the process of claim 5.

Claim 18: The composition according to claim 17, wherein the glyceride esters of fatty acids are conjugated fatty acid glycerides.

Claim 19: The composition according to claim 18, wherein the conjugated fatty acid glycerides are conjugated linoleic acid glycerides.

Claim 20: The composition according to claim 19, wherein the conjugated linoleic acid glycerides are enriched with cis-9, trans-11 or trans-10, cis-12-conjugated linoleic acid isomers.